

What is claimed is:

- 1.. A chewing gum composition comprising N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester in an amount effective to sweeten said chewing gum composition.
2. The chewing gum composition according to claim 1, wherein said N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester is in an amount of from about 10 to about 1600 parts per million.
3. The chewing gum composition according to claim 2, wherein said N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester is in an amount of from about 40 to about 600 parts per million.
4. The chewing gum composition according to claim 3, wherein said N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester is in an amount of from about 100 to about 250 parts per million.
5. A chewing gum composition according to claim 1, further comprising one or more additional sweeteners.
6. The chewing gum composition according to claim 5, wherein said one or more additional sweeteners is selected from the group consisting of xylose, ribulose, glucose, mannose, dextrin, galactose, fructose, sucrose, maltose, invert sugar, partially hydrolyzed starch, corn syrup solids, sorbitol, xylitol, mannitol, galactitol, maltitol, isomalt, maltodextrins,

hydrogenated starch hydrolysates, hydrogenated hexoses, hydrogenated disaccharides, dihydroxychalcones, monellin, steviosides, glycyrrhizins, dihydroflavenol, L-aminodicarboxylic acids, aminoalkenoic acid ester amides, saccharin, acesulfame, and saccharin and acesulfame salts, aspartame, alitame, chlorodeoxysugar derivatives of sucrose, thaumatin derivatives, and mixtures thereof.

7. The chewing gum composition according to claim 5, wherein said N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester is in an amount of from about 0.1 ppm to about 1200 parts per million.

8. The chewing gum composition according to claim 1 further comprising a chewable gum base.

9. The chewing gum composition according to claim 8, wherein said chewable gum base includes a resin which is selected from the group consisting of polyvinyl acetate and terpene resins.

10. The chewing gum composition according to claim 8, wherein said chewing gum base includes a fat or an oil which is selected from the group consisting of lard, tallow, soybean oil, cottonseed oil, hydrogenated and partially hydrogenated vegetable oils, cocoa butter, and combinations thereof.

11. The chewing gum composition according to claim 8, wherein said chewable gum base includes a wax which is selected from the group consisting of petroleum waxes,

paraffin, candellia, carnuba, beeswax, polyethylene, and combinations thereof.

12. The chewing gum composition according to claim 8, wherein said chewable gum base includes an elastomer which is selected from the group consisting of polyisobutylene, isobutylene-isoprene copolymer, styrene butadiene rubber, chicle, and combinations thereof.

13. The chewing gum composition according to claim 8 further comprising a softener which is selected from the group consisting of glycerin, lecithin, glycerol monostearate, glycerol triacetate, and combinations thereof.

14. The chewing gum composition according to claim 8, wherein said chewable gum base includes an inorganic filler which is selected from the group consisting of calcium carbonate, magnesium carbonate, talc, dicalcium phosphate, and combinations thereof.

15. The chewing gum composition according to claim 8 further comprising a texturizer which is selected from the group consisting of lycasin, glycerin, mannitol, or combinations thereof.

16. The chewing gum composition according to claim 8 further comprising a bulking or binding agent selected from the group consisting of dextrose, maltodextrin, lactose, inulin, cellulose, cellulose derivatives, gelatin, xanthan, guar, pectins, locust bean,

alginates, agar, carrageenans, gum acacia, tara gum, karaya gum, gellan gum, gurcellaran, tragacanth, guar gum hydrolysate, ghatti, microcrystalline cellulose, carbomethyl-cellulose, hollocellulose, cellulose gel, polydextrose, maltodextrose, isomalulose, polymaltose, arabinogalactan, palatinose, starches, starch hydrolysates, hydrogenated starch hydrolysates, partially hydrolyzed starch, dextrins, hydrogenated hexoses, fructooligosaccharides, sorbitol, xylitol, mannitol, maltitol, galactitol, isomalt, and mixtures thereof.

17. The chewing gum composition according to claim 8 further comprising an organic acid selected from the group consisting of citric acid, malic acid, tartaric acid, and mixtures thereof.

18. The chewing gum composition according to claim 8 further comprising a flavor selected from the group consisting of essential oils, synthetic flavors, oils derived from plants and fruits, citrus oils, fruit essences, peppermint oil, spearmint oil, clove oil, oil of wintergreen, anise, cinnamon, tutti frutti, strawberry, raspberry, lemon, orange, artificial flavorings, and combinations thereof.

19. The chewing gum composition according to claim 1, wherein between 6 and 10 minutes chewing time, the average sweetness intensity loss rate is less than 0.3 intensity units per minute.

25. The chewing gum composition according to claim 23, wherein the rapid release sweetener is selected from the group consisting of sucrose, mannitol, fructose, high fructose corn syrup, sorbitol, dextrose, corn

*Ref* syrup solids, hydrogenated starch hydrolysates, invert sugar, fructose, xylitol, and combinations thereof.

26. The chewing gum composition according to claim 1, wherein said N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester is encapsulated by or admixed with an agent.

27. The chewing gum composition according to claim 26, wherein the agent is selected from the group consisting of cellulose, cellulose derivatives, hydroxypropylmethyl cellulose, stearic acid, shellac, polyethylene wax 500, zein, sterine 27, alginates, gelatin, starches, proteins, sugars, sugar alcohols, complex carbohydrates, gums, hydrocolloids, gellan gum, polydextrose, polywax, hydrogenated starch hydrolyzate, polyvinyl acetate, xanthan gum, carrageenan, dextrose, malic acid, maltodextrin, gum arabic and combinations thereof.

28. A process for sweetening a chewing gum composition comprising the step of:  
including N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester in a chewing gum composition in an amount effective to sweeten said chewing gum composition.

29. The process of sweetening a chewing gum composition according to claim 28, wherein said N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester is included in an amount of from about 10 to about 1600 parts per million.

30. The process of sweetening a chewing gum composition according to claim 29, wherein said N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester is included in an amount of from about 40 to about 600 parts per million.

31. The process of sweetening a chewing gum composition according to claim 30, wherein said N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester is included in an amount of from about 100 to about 250 parts per million.

32. The process of sweetening a chewing gum composition according to claim 28 further comprising the step of including one or more additional sweeteners in said chewing gum composition.

33. The process of sweetening a chewing gum composition according to claim 32, wherein said one or more additional sweeteners is selected from the group consisting of xylose, ribulose, glucose, mannose, dextrin, galactose, fructose, sucrose, maltose, invert sugar, partially hydrolyzed starch, corn syrup solids, sorbitol, xylitol, mannitol, galactitol, maltitol, isomalt, maltodextrins, hydrogenated starch hydrolysates, hydrogenated hexoses, hydrogenated disaccharides, dihydroxychalcones, monellin, steviosides, glycyrrhizins, dihydroflavenol, L-aminodicarboxylic acids, aminoalkenoic acid ester amides, saccharin, acesulfame, and saccharin and acesulfame salts, aspartame, alitame, chlorodeoxysugar

derivatives of sucrose, thaumatin derivatives, and mixtures thereof.

34. The process of sweetening a chewing gum composition according to claim 32, wherein said N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester is included in an amount of from about 0.1 ppm to about 1200 parts per million.

35. The process of sweetening a chewing gum composition according to claim 28, wherein said chewing gum composition comprises a chewable gum base.

36. The process of sweetening a chewing gum composition according to claim 35, wherein said chewable gum base includes a resin which is selected from the group consisting of polyvinyl acetate and terpene resins.

37. The process of sweetening a chewing gum composition according to claim 35, wherein said chewing gum base includes a fat or an oil which is selected from the group consisting of lard, tallow, soybean oil, cottonseed oil, hydrogenated and partially hydrogenated vegetable oils, cocoa butter, and combinations thereof.

38. The process of sweetening a chewing gum composition according to claim 35, wherein said chewable gum base includes a wax which is selected from the group consisting of petroleum waxes, paraffin, candellia, carnuba, beeswax, polyethylene, and combinations thereof.



39. The process of sweetening a chewing gum composition according to claim 35, wherein said chewable gum base includes an elastomer which is selected from the group consisting of polyisobutylene, isobutylene-isoprene copolymer, styrene butadiene rubber, chicle, and combinations thereof.

40. The process of sweetening a chewing gum composition according to claim 35, wherein said chewing gum composition further comprises a softener which is selected from the group consisting of glycerin, lecithin, glycerol monostearate, glycerol triacetate, and combinations thereof.

41. The process of sweetening a chewing gum composition according to claim 35, wherein said chewable gum base includes an inorganic filler which is selected from the group consisting of calcium carbonate, magnesium carbonate, talc, dicalcium phosphate, and combinations thereof.

42. The process of sweetening a chewing gum composition according to claim 35, wherein said chewing gum composition further comprises a texturizer which is selected from the group consisting of lycasin, glycerin, mannitol, or combinations thereof.

43. The process of sweetening a chewing gum composition according to claim 35, wherein said chewing gum composition further comprises a bulking or binding agent selected from the group consisting of dextrose, maltodextrin, lactose, inulin, cellulose, cellulose

derivatives, gelatin, xanthan, guar, pectins, locust bean, alginates, agar, carrageenans, gum acacia, tara gum, karaya gum, gellan gum, gurcellaran, tragacanth, guar gum hydrolysate, ghatti, microcrystalline cellulose, carbomethyl-cellulose, hollocellulose, cellulose gel, polydextrose, maltodextrose, isomalulose, polymaltose, arabinogalactan, palatinose, starches, starch hydrolysates, hydrogenated starch hydrolysates, partially hydrolyzed starch, dextrans, hydrogenated hexoses, fructooligosaccharides, sorbitol, xylitol, mannitol, maltitol, galactitol, isomalt, and mixtures thereof.

44. The process of sweetening a chewing gum composition according to claim 35, wherein said chewing gum composition further comprises an organic acid selected from the group consisting of citric acid, malic acid, tartaric acid, and mixtures thereof.

45. The process of sweetening a chewing gum composition according to claim 35, wherein said chewing gum composition further comprises a flavor selected from the group consisting of essential oils, synthetic flavors, oils derived from plants and fruits, citrus oils, fruit essences, peppermint oil, spearmint oil, clove oil, oil of wintergreen, anise, cinnamon, tutti frutti, strawberry, raspberry, lemon, orange, artificial flavorings, and combinations thereof.

46. A process of extending the sweetness of a chewing gum composition comprising the step of:

sweetening a chewing gum composition with N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester according to claim 28.

47. A process of extending the flavor of a chewing gum composition comprising the step of:

sweetening a chewing gum composition with N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester according to claim 28.

48. A process of reducing the amount of flavor ingredient required to produce a full-flavored chewing gum composition and to maintain a level of flavor intensity comparable to a full-flavored chewing gum composition comprising the step of:

sweetening a chewing gum composition with N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester according to claim 28.

49. The process of sweetening a chewing gum composition according to claim 28, wherein said chewing gum composition further comprises a rapid release sweetener.

50. The process of sweetening a chewing gum composition according to claim 49, wherein the rapid release sweetener has a sweetness intensity maximum within the first 2 minutes of chewing.

51. The process of sweetening a chewing gum composition according to claim 49, wherein the rapid release sweetener is selected from the group consisting

of sucrose, mannitol, fructose, high fructose corn syrup, sorbitol, dextrose, corn syrup solids, hydrogenated starch hydrolysates, invert sugar, fructose, xylitol, and combinations thereof.

52. The process of sweetening a chewing gum composition according to claim 28, wherein said N-[N-(3,3-dimethylbutyl)-L- $\alpha$ -aspartyl]-L-phenylalanine 1-methyl ester is encapsulated by or admixed with an agent.

53. The process of sweetening a chewing gum composition according to claim 52, wherein the agent is selected from the group consisting of cellulose, cellulose derivatives, hydroxypropylmethyl cellulose, stearic acid, shellac, polyethylene wax 500, zein, sterine 27, alginates, gelatin, starches, proteins, sugars, sugar alcohols, complex carbohydrates, gums, hydrocolloids, gellan gum, polydextrose, polywax, hydrogenated starch hydrolyzate, polyvinyl acetate, xanthan gum, carrageenan, dextrose, malic acid, maltodextrin, gum arabic and combinations thereof.

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